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PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number (Optional) 2257-0260PUS1	
	Application Number 10/582,936-Conf. #9823	Filed June 15, 2006
	First Named Inventor Toshiyuki MAEDA et al.	
	Art Unit 2838	Examiner H. R. Behm

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- [ ] applicant /inventor.
- [ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- [x] attorney or agent of record. Registration number 40,439
- [ ] attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34.

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May 7, 2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

- [ ] *Total of 1 forms are submitted.

Docket No.: 2257-0260PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Toshiyuki MAEDA et al.

Application No.: 10/582,936 Confirmation No.: 9823

Filed: June 15, 2006 Art Unit: 2838

For: CURRENT SUPPLY CIRCUIT, POLYPHASE DRIVE CIRCUIT, METHOD OF DESIGNING CURRENT SUPPLY CIRCUIT Examiner: H. R. Behm

ARGUMENTS IN SUPPORT OF REQUEST FOR PRE-APPEAL BRIEF REVIEW

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

On page 3 of the final Office action ("Action"), the Examiner rejects claims 1-10 and 13-15 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,550,290 to Shimakage ("Shimakage") in view of Japanese Patent Publication No. JP 04-359890 to Yasuhiro et al. ("Yasuhiro"), Mitsubishi Application Note "Using Intelligent Power Modules" ("Mitsubishi Note 1"), further in view of Toshiba Application Guideline 15 ("Toshiba"). Applicants respectfully traverse this rejection.

In order to support a rejection under 35 U.S.C. § 103, the Examiner must establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness three criteria must be met. First there must be some motivation to combine the cited references. Second, there must be a reasonable expectation of success. Finally, the combination must teach each and every claimed element. In the present case, claims 1-10 and 13-15 are not rendered unpatentable by

the combination of Shimakage, Yashiro, Mitsubishi Note 1 and Toshiba for at least the reason that the combination fails to disclose each and every claimed element as discussed below.

Independent claim 5, and claims 6-10 and 13-15 which variously depend there from, defines a method of designing a current supply circuit supplied with an AC voltage of a predetermined effective value voltage. The method includes, *inter alia*, selecting switching elements having a breakdown voltage based on a rated current value, the breakdown voltage being *twice* the *breakdown voltage required* of the switching element when a DC voltage obtained by performing full-wave rectification on said AC voltage is input to said polyphase inverter circuit. Nowhere in any of the cited references is there any disclosure or suggestion of using a switching element with a breakdown voltage that is *twice* the breakdown voltage required when a DC voltage is input to said polyphase inverter circuit as claimed (i.e., a second breakdown voltage is twice a first breakdown voltage).

In response to Applicant's arguments, the Examiner asserts that Toshiba "teaches using a 1700V rated IGBT for a required voltage of 600Vac nominal." Furthermore, the Examiner asserts that "[s]ince the required voltage of 600Vac is rectified to 848V, the breakdown voltage is taught to be twice the voltage required." The Examiner's assertion is unfounded for the following reason.

Although Toshiba discloses using a 1700V rated IGBT for an input voltage of 600V as suggested by the Examiner, which *arguendo*, results in a breakdown voltage twice that of the *input* voltage, the claimed invention requires that the breakdown voltage be twice that of the *required breakdown* voltage, not the *input* voltage. Conventionally, in the 600V drive of the Toshiba, the required breakdown voltage would be 1200V. However, as noted by Toshiba due to various factors the required breakdown voltage could easily exceed 1200V resulting in the need for the 1700V IGBTs. Therefore, in order for Toshiba to disclose using a breakdown voltage twice the *required breakdown* voltage, Toshiba would have to disclose using a 2400V IGBT instead of the required 1200V, not a 1700V IGBT. The fact that Toshiba *arguendo* discloses a breakdown voltage twice the input voltage is not equivalent to teaching a breakdown voltage twice the *required breakdown voltage* as claimed.

Furthermore, regarding the Examiner's assertion on page 2 of the Action that "...the DC bus voltage is approximately equal to 2xRMS AC input voltage," Applicants note that the Examiner is incorrect. Toshiba discloses that the DC bus voltage is $\sqrt{2}$ x RMS AC input voltage, not 2 x RMS AC input voltage as asserted by the Examiner.

Therefore, claims 5-10 and 13-15 are patentable over the combination of Shimakage, Yasuhiro, Mitsubishi Note 1 and Toshiba for at least the fact that the combination fails to disclose or suggest selecting switching elements having a breakdown voltage *twice the required breakdown* voltage as claimed. Reconsideration and withdrawal of the rejection of claims 5-10 and 13-15 is respectfully requested.

Independent claim 1 and claims 2-4, which depend variously therefrom, define a current supply circuit that includes, *inter alia*, the features of claims 5 and 7. Accordingly, claims 1-4 are patentable over the combination of Shimakage, Yasuhiro, Mitsubishi Note 1 and Toshiba for the same reasons presented above with respect to claim 5.

On page 9 of the Action, the Examiner rejects claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Shimakage, Yasuhiro, Mitsubishi Note 1 and Toshiba, further in view of Mitsubishi Application Note "General Considerations for IGBT and Intelligent Power Modules" ("Mitsubishi Note 2"). Applicants respectfully traverse this rejection.

Claims 11 and 12 variously depend from independent claim 5. Therefore, claims 11 and 12 are patentable over the combination of Shimakage, Yasuhiro, Mitsubishi Note 1 and Toshiba for at least those reasons presented above with respect to claim 5. Although Mitsubishi Note 2 may disclose how to determine the switching loss in an IGBT circuit, Mitsubishi Note 2 fails to overcome the deficiencies of Shimakage, Yasuhiro, Mitsubishi Note 1 and Toshiba. Therefore, claims 11 and 12 are patentable over the combination of Shimakage, Yasuhiro, Mitsubishi Note 1, Toshiba, and Mitsubishi Note 2 for at least the reason that the combination fails to disclose each and every claimed feature. Reconsideration and withdrawal of the rejection of claims 11 and 12 under 35 U.S.C. § 103(a) is respectfully requested.